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LASER BONDING OF ANGIOPLASTY BALLOON CATHETERS

ABSTRACT OF THE DISCLOSURE

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A process for assembling a balloon catheter ~~which is~~ involves ~~assembled by a process of~~ selectively concentrating laser energy along an annular fusion bond site at contiguous surface portions of a length of catheter tubing and a shaft or neck portion of a dilatation balloon. The laser energy wavelength, and the polymeric materials of the balloon and catheter, are matched for high absorption of the laser energy to minimize conductive heat transfer in axial directions away from the bond site. This minimizes crystallization and stiffening in regions near the bond site, permitting fusion bonds to be located close to the proximal and distal cones of the dilatation balloon while preserving the soft, pliant quality of the cones. ~~The disclosure further is directed to an embodiment of a balloon catheter assembled according to the process.~~

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